



HIGHWAYS DEPARTMENT  
GOVERNMENT OF THE HONG KONG  
SPECIAL ADMINISTRATIVE REGION

Agreement No. CE 22/2005 (HY) Supplementary Agreement No. 1

# Traffic Improvements to Tuen Mun Road Town Centre Section – Investigation, Design and Construction

**Environmental Monitoring and Audit Report**  
December 2008



Maunsell Consultants Asia Ltd

MAUNSELL | AECOM

## TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION</b> .....	<b>1-1</b>
1.1	Background of the Project.....	1-1
1.2	Project Location and Programme .....	1-2
1.3	Project Scope.....	1-2
1.4	Purpose of the Manual.....	1-3
1.5	Project Organization.....	1-4
<b>2</b>	<b>NOISE IMPACT</b> .....	<b>2-1</b>
2.1	Introduction .....	2-1
2.2	Noise Parameters .....	2-1
2.3	Monitoring Requirement and Equipment .....	2-1
2.4	Monitoring Locations for Construction Phase .....	2-2
2.5	Baseline Monitoring for Construction Noise.....	2-3
2.6	Impact Monitoring for Construction Noise.....	2-3
2.7	Event and Action Plan.....	2-4
2.8	Construction Noise Mitigation Measures .....	2-4
2.9	Operational Traffic Noise Monitoring .....	2-8
<b>3</b>	<b>AIR QUALITY</b> .....	<b>3-1</b>
3.1	Introduction .....	3-1
3.2	Air Quality Parameters .....	3-1
3.3	Monitoring Requirement.....	3-1
3.4	Monitoring Equipment .....	3-2
3.5	Laboratory Measurement / Analysis .....	3-3
3.6	Monitoring Locations .....	3-4
3.7	Baseline Monitoring.....	3-5
3.8	Impact Monitoring.....	3-6
3.9	Air Quality Performance Limits .....	3-7
3.10	Event and Action Plan.....	3-7
3.11	Mitigation Measures .....	3-7
<b>4</b>	<b>WATER QUALITY</b> .....	<b>4-1</b>
4.1	Introduction .....	4-1
4.2	Construction Site Audits.....	4-1
4.3	Mitigation Measures .....	4-2
<b>5</b>	<b>WASTE MANAGEMENT</b> .....	<b>5-1</b>
5.1	Introduction .....	5-1
5.2	Mitigation Measures .....	5-1

<b>6</b>	<b>ECOLOGY</b> .....	<b>6-1</b>
6.1	Introduction .....	6-1
6.2	Mitigation of Adverse Ecological Impacts .....	6-1
<b>7</b>	<b>LANDSCAPE AND VISUAL</b> .....	<b>7-1</b>
7.1	Introduction .....	7-1
7.2	Monitoring Requirement .....	7-1
7.3	Mitigation Measures .....	7-2
<b>8</b>	<b>LAND CONTAMINATION</b> .....	<b>8-1</b>
8.1	Introduction .....	8-1
8.2	Land Contamination Assessment .....	8-1
<b>9</b>	<b>SITE ENVIRONMENTAL AUDIT &amp; ENVIRONMENTAL COMPLAINTS</b> .....	<b>9-1</b>
9.1	Introduction .....	9-1
9.2	Compliance with Legal and Contractual Requirements .....	9-2
9.3	Environmental Complaints .....	9-2
<b>10</b>	<b>REPORTING</b> .....	<b>10-1</b>
10.1	General .....	10-1
10.2	Baseline Monitoring Report .....	10-1
10.3	Monthly EM&A Reports .....	10-2
10.4	Quarterly EM&A Summary Reports .....	10-6
10.5	Final EM&A Review Report .....	10-7
10.6	Data Keeping .....	10-8
10.7	Interim Notifications of Environmental Quality Limit Exceedances .....	10-8

**Lists of Tables**

Table 2.1	Noise Monitoring Stations during Construction Phase
Table 2.2	Action and Limit Levels for Construction Noise
Table 2.3	Listing of Quiet PME Items
Table 2.4	NSRs – with Movable Noise Barrier
Table 2.5	Event/ Action Plan for Construction Noise
Table 2.6	Noise Monitoring Stations during Operation Phase
Table 3.1	Proposed Air Quality Monitoring Station
Table 3.2	Impact Monitoring Programme (TSP)
Table 3.3	Air Quality Criteria
Table 3.4	Event and Action Plan for Air Quality (Dust)

### List of Figures

- Figure 1.1 Site Plan
- Figure 1.2 Project Organisation and Line of Communication
- Figure 2.1a Locations of Construction Noise Monitoring Stations (Sheet 1 of 3)
- Figure 2.1b Locations of Construction Noise Monitoring Stations (Sheet 2 of 3)
- Figure 2.1c Locations of Construction Noise Monitoring Stations (Sheet 3 of 3)
- Figure 2.2a Locations of Operational Traffic Noise Monitoring Stations (Sheet 1 of 3)
- Figure 2.2b Locations of Operational Traffic Noise Monitoring Stations (Sheet 2 of 3)
- Figure 2.2c Locations of Operational Traffic Noise Monitoring Stations (Sheet 3 of 3)
- Figure 3.1a Locations of Dust Monitoring Stations (Sheet 1 of 3)
- Figure 3.1b Locations of Dust Monitoring Stations (Sheet 2 of 3)
- Figure 3.1c Locations of Dust Monitoring Stations (Sheet 3 of 3)
- Figure 9.1 Environmental Complain Flow Diagram

### Appendices

- Appendix A Implementation Schedule of Mitigation Measures
- Appendix B Sample Data Sheet for Air Quality Monitoring
- Appendix C Sample Data Sheet for Construction Noise Monitoring
- Appendix D Sample Data Sheet for Operational Traffic Noise Monitoring
- Appendix E Sample Template for Complaint Log
- Appendix F Sample Template for the Interim Notification of Exceedances